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TECHNICAL EDUCATION.

BY ALEXANDER MEEK, MUSEUM, PETERHEAD, SCOTLAND.

MR. MORSE has recently, in the *Atlantic Monthly*, advocated, and very ably, the extension of museums into the smaller towns. The success of the public libraries is as well known on this side as in America, and where museums have been established they have also been largely taken advantage of. And thus it is only fair that some definite purposes should be kept in view in their formation and in their arrangement. Such purposes the writer has set down elsewhere*, and there is little indeed to add or object to in the article above mentioned.

I hope soon to publish a description of a local museum, which has long had a quiet and dark existence in Peterhead, but which, with the institution of a reading room and free library, is now properly housed. The removal has been made the occasion of a complete revival and re-arrangement in new cases. We hope to have it opened in a week or two.

There is no doubt at all of the educational value of such institutions. The pity is that so many are hampered by want of funds to carry on the work and to provide a neat-handed, educated person to look after the collection. Were it possible to build such museums and libraries with other educational activities, I fancy the solution of the problem of providing for education, even in remote districts, would be brought to practicable ground and might be gone on with at once.

Let me tell those who read *Science* one direction which education has recently taken in this country, and some thoughts that are suggested for its continuance and furtherance.

In towns, the youth who takes up a work or profession, is led at once, by contact with his fellows, to attend University or Evening Technical classes, where he learns principles underlying his daily work. But in the country districts, until lately, little attempt has been made to instruct farmers and fishermen.

And like all similar attempts, even when made in towns, the failure of the work was by many guaranteed. Those who have passed from school to university, who have devoted themselves to some special department of learning, furnish often the worst enemies to the scheme. But the funds came suddenly, and the trial was made. Well, it may be granted at once that an itinerant instructor can do very little real teaching, but if he can successfully, every night of his course, hold up an attractive picture of scientific work and its results to those in front of him, he should, if well trained, find that his work is not unavailing, that it is possible to thus stimulate an interest in the questions he handles, and then the free libraries are called upon that the pupil may follow it up. I can vouch, from my own experience in this field, for the interest taken in the lectures and for the encouraging enthusiasm evinced by those who attend—many travelling six miles for the purpose. The interest shown, of course, is due, in my case, to the country audience being so directly interested in my subject—the *Farm Animals*.

But still there is here, as with the museums, the want of co-ordination. Not only is such instruction very much needed in the country, and the desirability of the schoolmasters taking the great share of it, but a number of good central institutions in the larger towns where such a complex subject as agriculture could be taught by competent teachers in all the departments and with which the schoolmasters and itinerant instructors would have direct connection.

Should such an extension be adopted in America, I

*Transactions of Buchan Field Club for 1893, etc.

think you will see the desirability of having it emanate from such institutions of agriculture as are to be found in Germany, and as in Guelph, Canada, on your side.

With the schoolboards, the Science and Art Department and the Technological Institution in London, and the County Councils, not to add universities, free libraries and museums, we have institutions enough in Britain, but their want of connection and independence of effort are much to be deplored.

It would be invidious in a journal like *Science* to discuss how that may be done. But for the purpose alike advocated by the writer in the *Atlantic Monthly* and of extending education into the country, such co-ordination is to be recommended.

PALENQUE HIEROGLYPHICS.

BY PH. J. J. VALENTINI, 351 LENOX AVE., NEW YORK CITY.

I HAVE prepared a memoir, in which an accurate account is given, both of the sculptured centre-picture set into the rear wall of the so-called Temple of the Cross, Palenque, and of the text contained in the 201 squares of hieroglyphics on the two lateral tablets.

Since the discovery of this temple by J. Lloyd Stephens, in 1849, this text has been the subject of much speculation. It was thought to tell the migratory and colonial history of the fabled Toltec nation. It was imagined to be written in hieroglyphics capable of being deciphered by the aid of a proffered alphabet. Neither of these speculations will stand the test.

As to the structure itself, it stands on a small tumulus, and was devoted to the memory of a defunct priest, whose name does not appear. But his portrait seems to be represented in the large sacrificial scene. He is offering the idol of *Chac* to the sacred *Quetzal*, this bird being perched on the top of the *Tree of Life* (yak-die), the latter standing on a pedestal in the shape of a grotesque human skull.

The purport of the left-hand tablet, as may be inferred from certain peculiar features and their arrangement, is that of a brief abstract of the records of the Palenque Temple. The other lateral tablet appears to contain a sort of biography of the dead priest.

With the exception of only two symbols of the twenty Maya days, the remaining exhibit the same features as are known from Landa's work and the extant codices, only that they show themselves in most elaborate form.

No symbol for the month makes its appearance on these tablets. Mr. Foerstemann's theory of reading double-columns is untenable; consequently, also, that of his day-symbols allied to month-symbols. The one is contradicted by the conspicuous separation of the columns themselves and by many other reasons. The other is refuted by literary statements. Landa's pictures of month-symbols are not the traditional ones, but fanciful suggestions.

There is no trace on the tablets of the Mexican Tonalamatl reckoning, but, rather, of that of the ancient Tulan (Palenque) vigesimal system.

A phonetic base underlies the text neither as a whole nor in part. The hieroglyphics are of pure ideogrammatic nature. Moreover, the eye will not meet any object *profane*. The squares show only objects *sacred*, belonging to the cult, the temple, or such as were brought to it with the purpose of sacrificial offerings. Their identification offers no difficulties. Almost all of them were described and discussed by Landa.

At the suggestion of the lamented Professor Baird, Smithsonian Institution, this memoir was begun in 1873. Its substance was ready for print in 1877, when I made an agreement with Dr. Rau, that he should first publish the description of the Palenque tablet, No. II., which stands preserved in the National Museum, and I then fol-

low giving the interpretation of the sculpture in full. Meanwhile, time, as well as the profound studies made in Maya archæology by various scholars, has contributed to perfecting the work in hand.

Deficient though it may be in many minor parts, I am desirous of publishing my views on this subject without further delay and of thus at last redeeming the pledges given.

HUMBOLDT AND BRAZIL.

THE statement is often made, even by Brazilian writers, that not only were express orders given by the Portuguese government to prevent the entrance of Humboldt in Brazilian territory but that a price was set upon his head in case he was found within the limits of the colony. A recent interesting discussion in the columns of the *Jornal de Commercio*, of Rio de Janeiro, has brought to light the official documents relating to the case, which is thus seen to be less discreditable to the Portuguese government than is usually represented. It is to be remembered that prior to the removal of the Portuguese royal family to Brazil, in 1808, the colonial policy was an exceedingly narrow one, and that foreigners were jealously excluded from all the colonial possessions.

A official letter from the minister of the kingdom, Dom Rodrigo de Souza Coutinho, to the governor of Para, Dom Francisco de Souza Coutinho, with the date of June 2, 1800, states: "It being reported that a certain Baron Humboldt, native of Berlin, has travelled in the interior of America, has sent home geographical observations of the countries traversed, and a collection of 1500 new plants, and that he intends to direct his voyage to the upper parts of the captaincy of Maranhão in order to examine desert regions up to the present time unknown, and as in the actual state of affairs this voyage without special orders of His Majesty is suspicious, you will cause to be determined with the greatest exactness and care if this or any other foreign traveller is travelling, or has travelled, in the territory of this captaincy, and in the affirmative case you will impede the continuation on such investigations, prohibited not only to foreigners but also to suspicious Portuguese not authorized by royal orders." The letter terminates recommending "the greatest circumspection, communicating at once to His Royal Highness, through this department of state, in order that he may take the steps required by faults of this nature."

In consequence of this order, Dom Diogo de Souza, governor of Maranhão, sent a circular letter, under date of Oct. 12, 1800, to various local authorities, "recommending that if by chance the said Baron Humboldt, or any other foreign traveller, appears in your district, you will have him conveyed, with all his companions, to the capital, *without, however, failing to treat him with all decency, nor to give him good treatment and conveniences*, only accompanying him and impeding his means of transportation and the making of political and philosophic observations."

Concerning this matter an interesting letter from Baron Eschwege to Humboldt has appeared, in which he communicates that he learned from his friend, Antonio de Araujo e Azevedo, Count da Barca, who had been Portuguese minister at La Hague, Paris, St. Petersburg and perhaps, also, Berlin, where he had probably made the personal acquaintance of Humboldt, and who was afterwards prime minister in Brazil, that learning of this order, he wrote at once to the prince regent, begging not only its prompt revocation in order not to attract the reproval of all Europe, but that orders should be given to aid Humboldt in every way, and that such orders were actually given.

It thus appears that even the narrowest of Portuguese

statesmen did not go to the length that is generally believed by their descendants and countrymen, and that enlightened men like Count da Barca were not lacking in Portugal at that time. Coming to power, a few years later, this statesman was the principal protector of Eschwege and the other foreign travellers that, after 1808, were allowed to penetrate freely in the interior of Brazil.

REMARKS ON THE TERNS OF LITTLE GREEN ISLAND, MAINE.

BY ARTHUR H. NORTON, WESTBROOK, ME.

THE Little Green Island is located to the southwest of Penobscot Bay, about 55° N. lat., 69° 2' W. lon. About a mile north the Northern or Eastern Triangles, a group of sunken ledges, some rising above the surface a little before and after high water, are scattered, noted as fishing grounds, as good gaming places, and as places to be especially avoided by mariners. The place is about seven or eight miles from the nearest mainland, a round rocky island inhabited only by sea birds and such organisms as find a suitable dwelling-place here—excepting the birds, probably nothing higher in the scale than insects. Throughout the year it is visited by gunners and fishermen, who often camp for a few days, or mayhap, throughout the summer season.

This was formerly one of the largest tern resorts in the vicinity, though to-day it is interesting only in a historical sense. It had for years been visited by fishermen, who came on picnics to gather the eggs of the "medericks," or terns, *Sterna hirundo* and *S. Paradisæa*. As they killed very few of the birds, and only took the eggs that were sufficiently fresh to sink in a dish of water, no serious reduction in the numbers of the "medericks" was evident, until they were slaughtered for their plumes or breasts.

I first visited the place, and beheld the wondrous beauty and natural fascinations of this great population of birds, from June 16 to 18, 1885. It was a bright, fair day, and we arrived about noon, finding them in the midst of their daily labors. Our approach to the island aroused the solicitude of those nearest the sea, which rose from the ground in companies of considerable size, some to resettle on their eggs or resting places, while others were still rising; some struck out boldly to view us more closely and herald our approach in a strong, shrill voice, and were quickly joined by others coming from the sea, pausing for a moment, then hurrying to land or hanging overhead to vociferate angrily to the unabating numbers round us. Such was our reception, and from daylight until dark, of those days, every movement which we made was carefully guarded by those creatures. We found the nests all over the island, from the windrows of seaweed, left by early high tides, in the gravel and "popple stones" on the beaches, on the bald, jagged ridges of ledge, projecting seaward, back through the pasture land to the summit of the island.

That year the place afforded pasturage to a large flock of sheep, which kept the grass cropped short, furnishing unlimited nesting sites, as our terns dislike tall grass for breeding places. Some were mere depressions in the sand or grass, others contained a few feathers from the parent, straws, or pieces of seaweed, and occasionally they were quite well lined; and one found in July, which was placed about a foot from a wisp of drift hay, was lined with it to a remarkable degree, being compact and strong, truly a pretty specimen of bird weaving.

While wandering over the island we were accompanied by a restless, pleading throng, seeming like a dome of animated white flakes within the great, impassive dome of outer blue. Those that were more distant were settling